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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,953	03/16/2001	Osamu Yamaguchi	204904US2SRD	5299
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			STREGE, JOHN B	
			ART UNIT	PAPER NUMBER
			2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/808,953

Applicant(s)

YAMAGUCHI, OSAMU

Examiner

John B Strege

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 recites the limitation "the reference" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 is generally narrative and indefinite, failing to conform with current U.S. practice. It appears to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 8, 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Coffin et al. USPN 5,991,429 (hereinafter "Coffin").

Claim 1 discloses, "a personal identification apparatus comprising: a storage device configured to store specific information of each of registered persons; an extraction device configured to extract specific information of an object person from the object person; a classification device configured to classify whether the object person is included in the registered persons by comparing the specific information of the registered persons, which is stored in said storage device, with the specific information of the object person, which is extracted by said extraction device; and a registered information operation device configured to sort an arrangement order of pieces of the specific information of the registered persons, which is stored in said storage device, in accordance with a use situation of the registered persons, or set whether the registered persons are to be subjected to classification."

Coffin discloses a facial recognition system for security access and identification. The system comprises a computer with a database for storing specific information of the users (910 figure 9)(storage device). The system further comprises a camera (920 figure 9) for taking a facial scan or image of a person (col. 2 lines 44-46). A region of interest is extracted from the image (76 figure 6)(extraction device). Correlation techniques compare previously processed image information with a presently scanned image to confirm or generate the identity of an individual (col. 1 lines 59-61, col. 7 lines 27-35)(78 figure 6)(classification device). Further disclosed is a sorted match list (ordered by match likelihood) of the names of people enrolled in the database whose images most closely resemble those of the object user in accordance with the image of

the object users image being captured (col. 7 lines 35-45)(registered information operation device to sort an arrangement order in accordance with a use situation).

Claim 3 discloses, "An apparatus according to claim 1, wherein when said classification device fails the classification between the object person and the registered persons, said classification device executes retry using the specific information of the object person which is extracted by said extraction device."

As seen in figure 4 step 45 Coffin discloses checking the image for validity. If the image of the object user is deemed invalid, the classification device executes retry by capturing another image (col. 5 lines 11-14).

Claim 8 discloses, "an apparatus according to claim 1, which comprises a presentation device configured to present information stored in said storage device together with an order in which pieces of the information are stored in said storage device."

Coffin discloses a main menu for an operator to interact with the identification system (col. 2 lines 54-56).

Claim 23 discloses similar limitations as claim 1, thus the arguments used for the rejection of claim 1 apply equally to claim 23.

Claim 24 discloses similar limitations as claim 1, thus the arguments used for the rejection of claim 1 apply equally to claim 24.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 in view of Krawchuk et al. USPN 5,418,942 (hereinafter Krawchuk).

Claim 2 discloses, "an apparatus according to claim 1, wherein said registered information operation device changes the arrangement order of pieces of the specific information of the registered persons in accordance with an elapse time from a preceding classification time or a frequency of classification between the registered persons and the object person."

As discussed above Coffin discloses all of the limitations of claim 1. Coffin does not explicitly disclose changing the arrangement order of the information in accordance with a frequency of classification between the registered persons and the object person.

It is well known to those of ordinary skill in the art to sort a database based on frequency of use in order to speed up the processing of information in the database. Krawchuk discloses that a fruitful method for improving execution efficiency of procedures is to arrange data according to the frequency of usage (col. 66 lines 49-51). In this way, execution speed is improved because the correct data can be found quicker (col. 66 lines 55-57).

Coffin and Krawchuk are analogous art because they both deal with the use of a database to store information about a user.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Coffin and Krawchuk in order to sort the database of registered user depending on their frequency of usage. The motivation for doing so would be to improve the execution speed of the processing. Thus it would have been obvious to one of ordinary skill in the art to combine Coffin and Krawchuk to obtain the invention as specified in claim 2.

Claim 25 recites similar limitations to claim 2, thus the same argument used for the rejection of claim 2 applies equally to claim 25.

5. Claims 4-5, 7, 16, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 (hereinafter "Coffin") in view of Price-Francis USPN 5,815,252.

Claim 4 recites, "an apparatus according to claim 1, wherein when said classification device fails classification between the object person and the registered persons, said extraction device extracts another specific information of the object person which differs from the specific information extracted from the object person, and said classification device compares the another specific information with the specific information of each of the registered persons to verify the specific information."

As discussed above Coffin discloses all of the limitations of claim 1. Coffin does disclose a comparison step with the extracted information but does not explicitly

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disclose that upon failure to classify the extraction device extracts another specific information of the object person that differs from the specific information originally extracted from the person.

It is well known in the art to use multiple means of authentication in order to insure the security of a system. Price-Francis discloses a biometric identification system that uses a fingerprint or multiple fingerprints to verify the identity of a person (col. 1 lines 14-29). If a defective fingerprint is obtained and the system fails to confirm the identity of a person the system can extract alternative fingerprint information (i.e. from one of the other fingers)(col. 4 lines 50-67).

Coffin and Price-Francis are analogous art because they are from the same field of endeavor of using biometrics to identify a person.

At the time of the invention it would have been obvious to combine Coffin and Price-Francis to obtain an invention that upon failure to confirm a person extracts alternative information from the user and performs a comparison with that information. The motivation for doing so would be to avoid false rejections in the system due to injuries of a person, faulty equipment, etc. Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to combine Coffin and Price-Francis to obtain the invention as specified in claim 4.

Claim 5 is similar to claim 4 except that upon failure it uses the same information to retry the system. It would be obvious to retry the combined system of Coffin and Price-Francis to prevent false rejections.

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Claim 7 discloses, "an apparatus according to claim 1, wherein said storage device stores respective personal information including the specific information of the registered person, the dictionary, name of the registered person, registration number, registration date when these pieces of information are stored in said storage device, and date/time and place of identification of the registered person."

Coffin discloses a database for the registered users of a system where each enrolled person is assigned an identification number (col. 1 lines 40-41) and an image of the person is stored upon enrollment (as seen at least in figure 1). Further included are the name of the user, address, social security number, and clearance level (col. 4 lines 9-10). Coffin does not explicitly disclose storing the registration date when the image is registered or the date/time and place of identification of the registered person.

Price-Francis discloses in Figure 3 a system for tracking the immigration of a person using biometrics. It keeps track of the date, time, and place of entry into a country.

Coffin and Price-Francis are analogous art because they are both from the same field of endeavor of biometrics using databases.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Coffin and Price-Francis in order to keep track of date, time, etc. The motivation for doing so would be to use the system of Coffin in an immigration environment to keep track of a persons comings and goings. Therefore it would have been obvious at the time of the invention to combine Coffin and Price-Francis to obtain the invention as specified in claim 7.

Claim 16 discloses, "an apparatus according to claim 1, wherein said storage device stores face information of the registered persons as the specific information of the registered persons, said extraction device extracts the face information of the object person as the specific information of the object person, said classification device includes an ID reader configured to read the registered information and identifies the object person by computing a similarity between the face information extracted by said extraction device and face information corresponding to the registered persons stored in said storage device."

As discussed above Coffin discloses storing facial images of the registered persons and a camera extracts the face information. Coffin does not explicitly disclose an ID reader, but he does disclose entering a pin number to read the registered information of a person (col. 7 lines 1-8). As discussed Coffin discloses computing a similarity between the face information extracted by the camera and registered people in the database (col. 7 lines 27-35).

Price-Francis disclose using a card to obtain the information about a person (as seen at least in figure 5).

At the time of the invention it would have been obvious to one of ordinary skill in the art to use an ID reader instead of a pin number. Reading an ID is well known and one of several methods that could be used to gather information about a registered user, therefore it is not a novel idea to use an ID card to read the registered information. Therefore it would have been obvious to one of ordinary skill in the art to combine Coffin and Price-Francis to obtain the invention as specified in claim 16.

Claim 26 is similar to claim 4, thus the same argument used for claim 4 applies equally to the rejection of claim 26.

Claim 27 is similar to claim 4, thus the same argument used for claim 4 applies equally to the rejection of claim 27.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 (hereinafter "Coffin") in view of Kado et al. USPN 5,995,639 (hereinafter "Kado").

Claim 6 discloses, "an apparatus according to claim 1, wherein said extraction device comprises a face region detector device configured to detect a face region of the object person as the specific information of the object person, a facial part detector configured to detect facial parts of the object person based on face region image information obtained by said face region detector device, and a feature extraction device configured to extract a feature of the object person based on grayscale information which is extracted for each pixel from the face region based on positional information of the facial parts."

As discussed above Coffin discloses all of the limitations of claim 1. Coffin further discloses capturing a region of a face (71 and 73 of figure 6) and extracting a region of interest from the facial image (76 figure 6). Coffin does not go into detail as to what method is used to carry out the facial matching but states that different engines can be used to carry out the facial matching (col. 5 lines 33-44). Therefore Coffin does not explicitly disclose that the feature extraction process extracts a feature based on grayscale information.

Kado discloses an apparatus for identifying a person where a feature point extracting section extracts feature points from the stored face image (col. 3 lines 34-35). The face image is divided into many small patches and the average brightness of each patch (grayscale) is used for identification purposes (col. 4 lines 2-6).

Coffin and Kado are analogous art because they are from the same field of endeavor of identifying a person using facial image processing.

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to combine Coffin and Kado to obtain a facial matching step that extracts a feature of the user based on grayscale values. The motivation for making this combination would be to use one of the already existing facial matching engines to fulfill the step of facial matching as disclosed by Coffin. Therefore it would have been obvious to one of ordinary skill in the art to combine Coffin and Kado in order to obtain the invention as specified in claim 6.

7. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 (hereinafter "Coffin") in view of Slocum et al. USPN 6,430,306.

Claim 9 discloses, "an apparatus according to claim 1, wherein said registered information operation device sorts and updates information read out from said storage device in accordance with any condition and sends sorted information to said storage device to store it therein."

As discussed, Coffin discloses all of the limitations of claim 1. Coffin further discloses sorting a list of registered persons based on the likelihood of a match with the

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object user (col. 7 lines 35-40). Also, Coffin discloses updating the database to add a persons height if necessary (col. 6 37-38). However, Coffin does not explicitly disclose sending the sorted information to the database.

Slocum discloses sorting and comparing data records as a function of the image of a persons face in order to manage a database containing images of individuals (col. 2 lines 6-8). It is "adapted for efficiently storing, sorting, and comparing data records as a function of the image of a person's face." Slocum further states that image searches of large databases is time consuming and sometimes impossible (col. 1 lines 45-47). To resolve this problem Slocum discloses sorting and dividing the information in the database into subsets, so that the recognition process is carried out on just the subset thus making the search of the database quicker (col. 3 lines 6-18).

Coffin and Slocum are analogous art because they are from the same field of endeavor of biometrics using facial images and using databases to store information about a person.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Coffin and Slocum in order to obtain an invention that sorts the database. The motivation for doing so would be to allow for certain information to be found quickly. Therefore it would have been obvious to combine Coffin and Slocum to obtain the invention as specified in claim 9.

Claim 15 discloses, "an apparatus according to claim 1, wherein said registered information operation device includes a selector configured to select appropriately the

pieces of registered person information stored in said storage device depending on whether they are information to be identified.”

As discussed Slocum selects a subset of the registered users and carries out the image comparison within that subset.

8. Claims 17-19, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 (hereinafter “Coffin”) in view Setlak et al. USPN 5,841,888.

Claim 20 discloses, “An apparatus according to claim 1, wherein said classification device performs comparison for selected pieces of the sorted information in accordance with the order of the sorted information.”

Coffin does not explicitly disclose performing comparison for selected pieces of the sorted information in accordance with the order of the sorted information.

Setlak discloses determining index values for reference fingerprints which are stored in a database (col. 6 lines 36-38), sorting the index values (at least col. 8 line 21), selecting subsets from the sorted values (at least col. 3 lines 49-50), and comparing the object persons fingerprints to each fingerprint of the subset (at least col. 3 lines 50-52). In this manner the sameple fingerprint need not be compared to all of the reference fingerprints, and this provides a more efficient approach to determining whether or not there is a match (col. 3 lines 55-58).

Coffin and Setlak are analogous art because they are from the same field of endeavor of biometrics using databases.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Coffin and Setlak to perform comparison for selected pieces of the sorted information in accordance with the order of the sorted information. The motivation for doing so would be to make the processing quicker by not having to search through all of the information in the database. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Coffin and Setlak in order to obtain the invention as specified in claim 20.

Regarding claims 17, 18, and 21, the invention as discussed by Setlak gives high priority to the indexed positions and only searches the subsets. The index values (flags) are given based on the similarity of the characteristics of the fingerprints (col. 4 lines 33-38).

Regarding claims 19, the invention as discussed by Setlak compares the object person with a plurality of references in the subset.

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coffin et al. USPN 5,991,429 (hereinafter "Coffin") in view Setlak et al. USPN 5,841,888 and further in view of Price-Francis USPN 5,815,252.

Claim 22 discloses, "An apparatus according to claim 17, wherein said classification device performs retry by collating a feature extracted newly by said extraction device with each of features of the specific information read out from said storage device when said classification device fails verification between the specific

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information stored in said storage device and the specific information extracted by said extraction device. “

As discussed above the combination of Coffin and Setlak disclose all of the limitations of claim 17. The combination of Coffin and Setlak does not explicitly disclose performing retry by comparing a newly extracted feature with the features in the reference database.

It is well known in the art to use multiple means of authentication in order to insure the security of a system. Price-Francis discloses a biometric identification system that uses a fingerprint or multiple fingerprints to verify the identity of a person (col. 1 lines 14-29). If a defective fingerprint is obtained and the system fails to confirm the identity of a person the system can extract alternative fingerprint information (i.e. from one of the other fingers)(col. 4 lines 50-67).

Coffin, Setlak, and Price-Francis are analogous art because they are from the same field of endeavor of using biometrics to identify a person.

At the time of the invention it would have been obvious to combine Coffin and Setlak as described above and further combine Price-Francis to obtain an invention that upon failure to confirm a person extracts alternative information from the user and performs a comparison with that information. The motivation for doing so would be to avoid false rejections in the system due to injuries of a person, faulty equipment, etc. Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to combine Coffin, Setlak, and Price-Francis to obtain the invention as specified in claim 22.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-8679. The examiner can normally be reached Monday-Friday between the hours of 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600